Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

Title V *(draft)* No. *V-97-037*
DART CONTAINER CORPORATION OF KENTUCKY
HORSECAVE, KENTUCKY
May 5, 2000
SREENIVAS KESARAJU

This permit is being issued as synthetic minor/Title V permit. Dart Container has requested a source wide VOC emissions limit of 240 TPY to preclude the applicability of PSD. The major processes that are in operation at this source are expandable (EPS) molding, direct Injection (DI) extrusion, thermoforming and injection molding. Foam cups and containers are produced by EPS molding, cold cups and impact plates and containers are produced by extrusion and thermoforming, and plastic cutlery through injection molding. The emission points are described below:

SOURCE DESCRIPTION:
Emission Point #1: Boiler to generate Steam (Maximum Rated Capacity: 31.40 mmBTU/hr)
Emission Point #2: Boiler to generate Steam (Maximum Rated Capacity: 31.40 mmBTU/hr)
Emission Point #3: Boiler to generate Steam (Maximum Rated Capacity: 33.5 mmBTU/hr)

COMMENTS:
There is no control equipment at these units. The emission factors have been taken from AP-42.

40 CFR 60, Subpart DC, is not applicable to these units, as these units are constructed prior to June 9, 1989. 401 KAR 59:015, New indirect fired heat exchangers, applies to these units.

SOURCE DESCRIPTION:
Emission Point #4: Expandable Polystyrene Container Manufacturing

COMMENTS:
The major emissions of VOC from this source are from EPS Molding. The raw material, Expandable polystyrene (EPS) beads contain n-pentane blowing agent. This process consists of various operations, such as blenders, pre expanders, screeners, holding bags, and molders. The pentane is emitted from all the above processes. There are no emission factors or guidance available. Dart container has proposed a method to measure the pentane emissions, which they use in all their other plants. They measure the pentane content in the raw EPS beads and the final product which is shipped. The permit conditions the source to demonstrate the validity of the emissions information by source testing within six month anniversary date of permit issuance. Until this date, the emission factor used in Michigan Air Permit will be used to demonstrate compliance. Data was submitted for previous testing at the Horse Cave facility which has emission factor less than the emission factor at Michigan Plant. However the Division has determined that additional testing is necessary for the source specific emission factor development. The emission point description in the permit, does not describe the number of individual molders, pre expanders etc. The source has requested this flexibility, so that they can install additional molds as their business demands. The draft permit includes this flexibility as the total emissions are restricted. Also, the source is planning

to install a capturing device at the pre expanders, and are planning to route the captured pentane to the boilers. They proposed to install a CEM to measure the pentane captured. This scenario, will change the method of compliance demonstration of the VOC emissions limit. This was included in the alternating operating scenario, which will come into effect after the installation of the control system, and performance/compliance testing.

SOURCE DESCRIPTION:
Emission Point #5: Impact Extruders& Thermoformers
Emission Point #6: OPS Extrusion Lines & Thermoformers
Emission Point #7: Recycle/Reclaim Extruders
Emission Point #8: DI Foam Extrusion lines with) Laminators and Foam Thermoformers

COMMENTS:
All the above emission points consist of extruders and thermoformers. There is no control equipment for these affected facilities.
Emission Factors from extruders: There was no information available on emission factors from the extrusion processes and source testing is very difficult. The source has proposed the usage of emission factors given in AP-42, for Polystyrene manufacturing. AP-42 has emission factor for the emissions from pelletizing die in a polymerization process, where the molten plastic is extruded into water bath. This is the closest available to the extrusion operation. AP-42 has emission factors for continuous and batch polymerization. Dart container corporation buys the polystyrene from Dart Polymers, which produces polystyrene by continuous or semi continuous process. The source proposed to use emission factors which are 50% of the emission factors used in polystyrene manufacturing. This request was approved, as a portion of styrene is already lost at PS pelletizing die, thus lowering the amount of styrene available in Polystyrene extrusion at Dart Container.
Emission Factors from thermoformers: There is no emissions information for thermoformers available. The extruded sheet goes through the thermoforming ovens, where it does not melt. The amount of any styrene emitted will be very low. The source proposed to use emission factors which are 50% of the emission factors used in polystyrene extruding. This request was approved, as the emissions from thermoforming are very low.

Dart proposed to do additional source testing in the future, to check the emission factors. This was not required in the permit.

The emission point description in the permit, does not describe the number of individual extruders and thermoformers. The source has requested this flexibility, so that they can install additional equipment as their business demands. That request was accepted as the compliance demonstration at this affected facility is solely based on raw material throughput which is limited.

The regulation 401 KAR 63:020, Potentially hazardous matter or toxic substances, applies to these facilities. There are no other requirements, except the voluntary limits on polystyrene throughputs and VOC emissions rate to preclude PSD.

SOURCE DESCRIPTION:
Emission Point #9: UV ink Printers for Foam Cups
Emission Point #10: In-Line UV Ink Printers and Off Line Printers for Paper Cups

COMMENTS:
This emission point has VOC emissions generated from printing (ink usage) and from clean up solvent usage.

Ink Usage: The source has taken voluntary limit on the ink usage and VOC emissions to preclude PSD applicability. The emission factors are obtained from source testing, which was approved by EPA and KYDAQ.

Cleanup Solvent Usage: Regulation 401 KAR 61:060, Existing sources using organic solvents applies. This regulation limits the emissions from each of the above affected facilities to 8 lb/hr and 40 lb/day which equals 14,600 lb/year. The emissions are assumed to be 100% of the usage. The source has taken a voluntary limit of 14,600 lb/year usage of cleanup solvent combined from the above points. Also, the source has taken a voluntary limit on VOC emissions to preclude PSD applicability.